

# LNPTM THERMOCOMPTM COMPOUND QF006

QF-1006

## **DESCRIPTION**

LNP THERMOCOMP QF006 compound is based on Nylon 6/10 resin containing 30% glass fiber.

GENERAL INFORMATION	
Features	High stiffness/Strength, No PFAS intentionally added
Fillers	Glass Fiber
Polymer Types	Polyamide 610 (Nylon 610)
Processing Techniques	Injection Molding

INDUSTRY	SUB INDUSTRY
Building and Construction	Building Component
Consumer	Sport/Leisure, Personal Accessory, Home Appliances, Commercial Appliance
Electrical and Electronics	Mobile Phone - Computer - Tablets
Industrial	Electrical

#### **TYPICAL PROPERTY VALUES**

Revision 20230607

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL (1)			
Tensile Stress, break	150	MPa	ASTM D638
Tensile Strain, break	3.6	%	ASTM D638
Tensile Modulus, 50 mm/min	8410	MPa	ASTM D638
Flexural Stress	250	MPa	ASTM D790
Flexural Modulus	7860	MPa	ASTM D790
Tensile Stress, break	153	MPa	ISO 527
Tensile Strain, break	3.5	%	ISO 527
Tensile Modulus, 1 mm/min	8800	MPa	ISO 527
Flexural Stress	219	MPa	ISO 178
Flexural Modulus	7800	MPa	ISO 178
IMPACT (1)			
Izod Impact, unnotched, 23°C	1116	J/m	ASTM D4812
Izod Impact, notched, 23°C	122	J/m	ASTM D256
Instrumented Dart Impact Energy @ peak, 23°C	9	J	ASTM D3763
Multiaxial Impact	2	J	ISO 6603
Izod Impact, unnotched 80*10*4 +23°C	71	kJ/m²	ISO 180/1U
Izod Impact, notched 80*10*4 +23°C	9	kJ/m²	ISO 180/1A
THERMAL (1)			
HDT, 0.45 MPa, 3.2 mm, unannealed	220	°C	ASTM D648
HDT, 1.82 MPa, 3.2mm, unannealed	207	°C	ASTM D648
CTE, -40°C to 40°C, flow	3.05E-05	1/°C	ASTM E831
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RPOPERTIES         TYPICAL VALUES         UNITS         EST METHODS           CTE, 40°C to 40°C, filow         2.76.95         1/°C         ASIM E831           CTE, 40°C to 40°C, filow         3.06.05         1/°C         IST 1359-2           CTE, 40°C to 40°C, filow         2.76.05         1/°C         IST 1359-2           Relative Temp Index, Mech w/Impact <sup>(2)</sup> 65         °C         U.7468           Relative Temp Index, Mech w/Impact <sup>(2)</sup> 65         °C         U.7468           Relative Temp Index, Mech w/Impact <sup>(2)</sup> 65         °C         U.7468           Relative Temp Index, Mech w/Impact <sup>(2)</sup> 65         °C         U.7468           Relative Temp Index, Mech w/Impact <sup>(2)</sup> 50         °C         U.7468           Relative Temp Index, Mech w/Impact <sup>(2)</sup> 1.309         g/cm²         ASTM 0792           Mold Shrinkage, Mow, 24 hrs <sup>(3)</sup> 1.20         \$         ASTM D795           Mold Shrinkage, Mow, 24 hrs <sup>(3)</sup> 1.7-0.18         \$         150-294           Mold Shrinkage, How, 24 hrs <sup>(3)</sup> 3.3         g/cm²         150-294           Mold Shrinkage, How, 24 hrs <sup>(3)</sup> 3.1         3.0         160-294           Mold Shrinkage, How, 24 hrs <sup>(3)</sup> 4.1         4.6<				
CF. 40°C to 40°C, falow         3.666.95         I°C         10°C         10°C <t< th=""><th>PROPERTIES</th><th>TYPICAL VALUES</th><th>UNITS</th><th>TEST METHODS</th></t<>	PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
CF. 40°C to 40°C, falow       7.27°C to 1.27°C to 1.27°	CTE, -40°C to 40°C, xflow	7.27E-05	1/°C	ASTM E831
Relative Temp Index, Elec (°)         65         °C         U.7468           Relative Temp Index, Mech w/ impact (°)         65         °C         U.7468           Relative Temp Index, Mech w/ impact (°)         65         °C         U.7468           PHYSICAL (°)           Embry Carlot         1.309         g/cm²         ASTM 0792           Mol Shrinkage, flow, 24 hrs (°)         2.2         %         ASTM 0550           Mold Shrinkage, flow, 24 hrs (°)         1.7 – 0.18         %         ASTM 0555           Mold Shrinkage, flow, 24 hrs (°)         1.7 – 0.18         %         ASTM 0555           Mold Shrinkage, flow, 24 hrs (°)         1.7 – 0.18         %         ASTM 0555           Mold Shrinkage, flow, 24 hrs (°)         0.8 – 0.99         %         December 18           Mold Shrinkage, flow, 24 hrs (°)         0.3         3.2         0.5         2.4           Mold Shrinkage, flow, 24 hrs (°)         0.3         3.2         0.5         3.0	CTE, -40°C to 40°C, flow	3.06E-05	1/°C	ISO 11359-2
Relative Temp Index, Mech w/ impact (²)         65         °C         U.7468           Relative Temp Index, Mech w/ o impact (²)         65         °C         U.7468           PHYSICAL (¹)         V         U.7468           Donity         ASTM D792         ASTM D792           Molosture Absorption (23°C/50% RH/24 hrs)         0.2         35M D792           Molost Shrinkage, flow, 24 hrs (²)         0.2         35M D795           Mold Shrinkage, flow, 24 hrs (²)         1.70 Li 8         35M D795           Mold Shrinkage, flow, 24 hrs (²)         0.72 Li 8         35M D795           Mold Shrinkage, flow, 24 hrs (²)         0.72 Li 8         35M D795           Mold Shrinkage, flow, 24 hrs (²)         0.72 Li 8         35M D795           Mold Shrinkage, flow, 24 hrs (²)         0.72 Li 8         35M D795           Mold Shrinkage, flow, 24 hrs (²)         0.72 Li 8         35M D795           Mold Shrinkage, flow, 24 hrs (²)         0.72 Li 8         35M D795           Mold Shrinkage, flow, 24 hrs (²)         0.72 Li 8         35M D795           Mold Shrinkage, flow, 24 hrs (²)         0.72 Li 8         35M D795           Molistre Absorption (23°C) State Hrs (²)         1.72 Li 8         35M D795           Brobition (140°C)         1.72 Li 8         35M D795	CTE, -40°C to 40°C, xflow	7.27E-05	1/°C	ISO 11359-2
Relative Temp Index, Mechany Index, Mechany IndexHoristical. IndexHoristical IndexHoristical IndexHoristical IndexHoristical IndexHoristical IndexHoristical IndexHoristical IndexHoristical IndexHoristical IndexMold Shrinkage, flow, 24 hrs. Index123454Mold Shrinkage, flow, 24 hrs. Index1359499Mold Shrinkage, flow, 24 hrs. Index13999999Mold Shrinkage, flow, 24 hrs. Index139999999Mold Shrinkage, flow, 24 hrs. Index23999999Mold Shrinkage, flow, 24 hrs. Index33999999Mold Shrinkage, flow, 24 hrs. Index33999999Mold Shrinkage, flow, 24 hrs. Index339999999Mold William (All Picture)453999999Mold Horizon (All Picture)559999999Mold Horizon (All Picture)559999999Mold Horizon (All Picture)59999999	Relative Temp Index, Elec <sup>(2)</sup>	65	°C	UL 746B
Physical. <sup>1</sup> Density         1.009         g/cm³         ASTM D792           Moistre Absorption, (23°C/50%RH/24 hrs)         0.2         45m 507         ASTM D573           Mold Shrinkage, flow, 24 hrs <sup>(1)</sup> 1         2         ASTM D573           Mold Shrinkage, flow, 24 hrs <sup>(1)</sup> 1         3         ASTM D553           Mold Shrinkage, flow, 24 hrs <sup>(1)</sup> 1         3         3         ASTM D554           Mold Shrinkage, flow, 24 hrs <sup>(1)</sup> 1         1         2         2         4         2         4         1         3         2         4         1         2         4         1         3         1         2	Relative Temp Index, Mech w/impact (2)	65	°C	UL 746B
Density         Jone         ASM D792           Moisture Absorption, (23°C/50% RH/24 hrs)         0.2         3 MM D50           Mold Shrinkage, flow, 24 hrs (1)         2         3 MM D50           Mold Shrinkage, Aflow, 24 hrs (1)         1         3 MM D50           Mold Shrinkage, flow, 24 hrs (1)         1.7 − 0.18         3 MM D55           Mold Shrinkage, flow, 24 hrs (1)         0.78 − 0.08         3 MM D55           Mold Shrinkage, flow, 24 hrs (1)         0.78 − 0.08         3 MM D55           Mold Shrinkage, flow, 24 hrs (1)         0.78 − 0.08         3 MM D55           Mold Shrinkage, flow, 24 hrs (1)         0.78 − 0.08         3 MM D55           Mold Shrinkage, flow, 24 hrs (1)         0.28 − 0.09         3 MM D50         3 MM D50           Mold Shrinkage, flow, 24 hrs (1)         0.38 − 0.09         3 MM D50         3 MM D50           Boil Shrinkage, flow, 24 hrs (1)         0.38 − 0.09         3 MM D50         3 MM D50           Boil Shrinkage, flow, 24 hrs (1)         0.12 − 0.00         0.00	Relative Temp Index, Mech w/o impact (2)	65	°C	UL 746B
Moisture Absorption, (23°C/50% RH/24 hrs)         0.2         8         ASTM D575           Mold Shrinkage, flow, 24 hrs <sup>(3)</sup> 0.2         %         ASTM D955           Mold Shrinkage, xflow, 24 hrs <sup>(3)</sup> 0.17 −0.18         %         ASTM D955           Mold Shrinkage, flow, 24 hrs <sup>(3)</sup> 0.08 −0.98         %         ISO 294           Mold Shrinkage, xflow, 24 hrs <sup>(3)</sup> 0.98 −0.99         %         ISO 294           Moisture Absorption (23°C / 50% RH)         1.3         g/cm         ISO 1183           Moisture Absorption (23°C / 50% RH)         3.3         g/cm         ISO 1183           Moisture Absorption (14Wl), PLC 4         21.5         mm         U.746A           High Amp Arc Ignition (HM), PLC 9         21.5         mm         U.746A           High CHARCATERISTICS <sup>(2)</sup> U.746A         U.746A           U. Vellow Card Link         £2.1562-101281585         mm         U.946           U. Vellow Card Link         £2.1562-101281585         2         2           Diving Time         4         His         2           Drying Time         4         His         2           Makit maperature         20 − 2.7         2         2           Front - Zone 3 Temperature         20	PHYSICAL (1)			
Mold Shrinkage, flow, 24 hrs (³)         1         4 Mold Shrinkage, xflow, 24 hrs (³)         1         4 Mold Shrinkage, xflow, 24 hrs (³)         10.7 − 0.18         8 Mold Shrinkage, xflow, 24 hrs (³)         10.7 − 0.18         8 Mold Shrinkage, xflow, 24 hrs (³)         10.9 − 0.99         \$ Mold Shrinkage, xflow, 24 hrs (³)         10.9 − 0.99         \$ Mold Shrinkage, xflow, 24 hrs (³)         10.18 □ 0.99         10.18 □ 0.90	Density	1.309	g/cm³	ASTM D792
Mold Shrinkage, xflow, 24 hrs <sup>(3)</sup> 17 - 0.18         \$10 - 0.19         \$10 - 0.18         \$10 - 0.20	Moisture Absorption, (23°C/50% RH/24 hrs)	0.2	%	ASTM D570
Mold Shrinkage, flow, 24 hrs (³)0.7-0.8%50.294Mold Shrinkage, xflow, 24 hrs (³)0.98-0.99%50.294Density1.33.010.183Moisture Absorption (23°C / 50% RH)3.33.03.010.20ELECTRICAL (¹)*********************************	Mold Shrinkage, flow, 24 hrs <sup>(3)</sup>	0.2	%	ASTM D955
Mold Shrinkage, xflow, 24 hrs (³)         0.98 – 0.99         %         50 – 94           Density         1.3         3.3         50 – 92         50 – 62           Moisture Absorption (23°C / 50% RH)         0.33         8         50 – 62           ELECTRICAL (¹)               Hot-Wire Ignition (HWI), PLC 4         ≥1.5         mm         U. 746A           High Amp Arc Ignition (HAI), PLC 0         ≥1.5         mm         U. 746A           High Voltage Arc Track Rate (PLC)         0         PC – 0             LV Ledow Card Link         £121562-101281585 <th>Mold Shrinkage, xflow, 24 hrs <sup>(3)</sup></th> <th>1</th> <th>%</th> <th>ASTM D955</th>	Mold Shrinkage, xflow, 24 hrs <sup>(3)</sup>	1	%	ASTM D955
Density1.3g/m³150 183Moisture Absorption (23°C / 50°RH)0.33%150 20ELECTRICAL (1)174 6ABrd-Wire Ignition (HWI), PLC 421.5mm01.746AHigh Amp Arc Ignition (HAI), PLC 021.5mm01.746AHigh Voltage Arc Track Rate (PLC)0PLC Ode01.746AUY Yellow Card Link£121562-101281585UY Recognized, 94HB Flame Class Rating21.5mm01.94Dying Temperature80°C-Dying Time44Hrs-Maximum Moisture Content270-275°C-Melt Temperature270-280°C-Front - Zone 3 Temperature270-280°C-Middle - Zone 2 Temperature260-270°C-Moid Temperature250-260°C-Moid Temperature80-95°C-Moid Temperature80-95°C-Moid Temperature80-95°C-Moid Temperature80-95°C-Moid Temperature80-95°C-Moid Temperature80-95PC-Moid Temperature80-95PC-Moid Temperature80-95PC-Moid Temperature80-95PC-Moid Temperature80-95PC-Moid Temperature80-95PC-Moid Temperature80-95PC-Mo	Mold Shrinkage, flow, 24 hrs <sup>(3)</sup>	0.17 – 0.18	%	ISO 294
Noisture Absorption (23°C / 50%RH)       0.33       %       15062         ELECTRICAL (¹¹)         Hot-Wire Ignition (HWI), PLC 4       1.5       mm       U. 746A         High Amp Arc Ignition (HAI), PLC 0       2.5       mm       U. 746A         High Voltage Arc Track Rate (PLC)       0       PLC Code       U. 746A         U. Yellow Card Link       £121562-101281585       -       -       -       -         U. Yellow Card Link       £121662-101281585       - <th>Mold Shrinkage, xflow, 24 hrs <sup>(3)</sup></th> <th>0.98 – 0.99</th> <th>%</th> <th>ISO 294</th>	Mold Shrinkage, xflow, 24 hrs <sup>(3)</sup>	0.98 – 0.99	%	ISO 294
ELECTRICAL (**)         Hot-Wire Ignition (HWI), PLC 4       21.5       mm       UL 746A         High Amp Arc Ignition (HAI), PLC 0       21.5       mm       UL 746A         High Voltage Arc Track Rate (PLC)       0       PLC Code       U. 746A         FLAME CHARACTERISTICS (**)         UL Yellow Card Link       £121562-101281585       -       -         UL Recognized, 94HB Flame Class Rating       1.5       mm       U. 94         INJECTION MOLDING (**)         Toying Temperature       8       **       **         Pring Time       4       Hrs       **       **         Maximum Moisture Content       0.12 - 0.2       **       **       **         Melt Temperature       270 - 275       **       **       **       **         Front - Zone 3 Temperature       270 - 280       **	Density	1.3	g/cm³	ISO 1183
Hot-Wire Ignition (HWI), PLC 4≥1.5mmU. 746AHigh Amp Arc Ignition (HAI), PLC 0≥1.5mmU. 746AHigh Voltage Arc Track Rate {PLC}0PLC CodeU. 746AFLAME CHARACTERISTICS (2)UL Yellow Card Link121562-101281585**UL Recognized, 94HB Flame Class Rating≥1.5mmU. 94INJECTION MOLDING (4)Drying Temperature80**Maximum Moisture Content0.12 - 0.2%*Melt Temperature270 - 275**Front - Zone 3 Temperature270 - 280**Middle - Zone 2 Temperature260 - 270**Rear - Zone 1 Temperature250 - 260**Mold Temperature80 - 95**Back PressureWPa**	Moisture Absorption (23°C / 50% RH)	0.33	%	ISO 62
High Amp Arc Ignition (HAI), PLC 0≥1.5mmUL 746AHigh Voltage Arc Track Rate {PLC}0PLC OdeU. 746AFLAME CHARACTERISTICS (2)UL Yellow Card LinkE121562-101281585UL Recognized, 94HB Flame Class Rating≥1.5mmU. 94INJECTION MOLDING (4)Drying Temperature80°C-Drying Time4HrsMaximum Moisture Content0.12 – 0.2%-Melt Temperature270 – 275°C-Front - Zone 3 Temperature270 – 280°C-Middle - Zone 2 Temperature250 – 260°C-Meld Temperature250 – 260°C-Mold Temperature80 – 95°C-Mold Temperature0.2 – 0.3MPa-	ELECTRICAL (1)			
High Voltage Arc Track Rate [PLC] 0 PLC Code UL 746A  FLAME CHARACTERISTICS (2)  UL Yellow Card Link Flame Class Rating Flore C	Hot-Wire Ignition (HWI), PLC 4	≥1.5	mm	UL 746A
FLAME CHARACTERISTICS (2)  UL Yellow Card Link	High Amp Arc Ignition (HAI), PLC 0	≥1.5	mm	UL 746A
UL Yellow Card Link£121562-101281585UL Recognized, 94HB Flame Class Rating≥1.5mmUL 94INJECTION MOLDING (4)Drying Temperature80°C-Drying Time4Hrs-Maximum Moisture Content0.12 - 0.2%-Melt Temperature270 - 275°C-Front - Zone 3 Temperature270 - 280°C-Middle - Zone 2 Temperature260 - 270°C-Rear - Zone 1 Temperature250 - 260°C-Mold Temperature80 - 95°C-Back PressureMPa	High Voltage Arc Track Rate {PLC}	0	PLC Code	UL 746A
UL Recognized, 94HB Flame Class Rating         ≥1.5         mm         UL 94           INJECTION MOLDING <sup>(4)</sup> UL 94           Drying Temperature         80         °C         Lead of the properature           Maximum Moisture Content         0.12 – 0.2         %         Lead of the properature           Melt Temperature         270 – 275         °C         Lead of the properature           Middle - Zone 3 Temperature         260 – 270         °C         Lear - Zone 1 Temperature         250 – 260         °C           Rear - Zone 1 Temperature         80 – 95         °C         Lear - Zone 1 Temperature         %           Mold Temperature         80 – 95         °C         Lear - Zone 1 Temperature         %           Back Pressure         0.2 – 0.3         MPa         Lear - Zone 1 Temperature	FLAME CHARACTERISTICS (2)			
INJECTION MOLDING <sup>(4)</sup> Drying Temperature 800 °C  Drying Time 4 Hrs  Maximum Moisture Content 270 - 275 °C  Melt Temperature 270 - 280 °C  Middle - Zone 2 Temperature 260 - 270 °C  Rear - Zone 1 Temperature 250 - 260 °C  Mold Temperature 80 - 95 °C  Mold Temperature 80 - 95 °C  Mold Temperature 80 - 270 °C  Mold Temperature 80 - 270 °C  Mold Temperature 80 - 270 °C  Mold Temperature 80 - 250 - 260 °C  Mold Temperature 80 - 95 °C  Mold Temperature 90 - 90 °C  Mold Temperature 90 °C  Mold Temperatur	UL Yellow Card Link	E121562-101281585	-	-
Drying Temperature         80         °C           Drying Time         4         Hrs           Maximum Moisture Content         0.12 - 0.2         %           Melt Temperature         270 - 275         °C           Front - Zone 3 Temperature         270 - 280         °C           Middle - Zone 2 Temperature         260 - 270         °C           Rear - Zone 1 Temperature         250 - 260         °C           Mold Temperature         80 - 95         °C           Back Pressure         MPa	UL Recognized, 94HB Flame Class Rating	≥1,5	mm	UL 94
Drying Time         4         Hrs           Maximum Moisture Content         0.12 – 0.2         %           Melt Temperature         270 – 275         °C           Front - Zone 3 Temperature         270 – 280         °C           Middle - Zone 2 Temperature         260 – 270         °C           Rear - Zone 1 Temperature         250 – 260         °C           Mold Temperature         80 – 95         °C           Back Pressure         0.2 – 0.3         MPa	INJECTION MOLDING (4)			
Maximum Moisture Content         0.12 - 0.2         %           Melt Temperature         270 - 275         °C           Front - Zone 3 Temperature         270 - 280         °C           Middle - Zone 2 Temperature         260 - 270         °C           Rear - Zone 1 Temperature         250 - 260         °C           Mold Temperature         80 - 95         °C           Back Pressure         0.2 - 0.3         MPa	Drying Temperature	80	°C	
Melt Temperature         270 – 275         °C           Front - Zone 3 Temperature         270 – 280         °C           Middle - Zone 2 Temperature         260 – 270         °C           Rear - Zone 1 Temperature         250 – 260         °C           Mold Temperature         80 – 95         °C           Back Pressure         0.2 – 0.3         MPa	Drying Time	4	Hrs	
Front - Zone 3 Temperature         270 – 280         °C           Middle - Zone 2 Temperature         260 – 270         °C           Rear - Zone 1 Temperature         250 – 260         °C           Mold Temperature         80 – 95         °C           Back Pressure         0.2 – 0.3         MPa	Maximum Moisture Content	0.12 – 0.2	%	
Middle - Zone 2 Temperature         260 – 270         °C           Rear - Zone 1 Temperature         250 – 260         °C           Mold Temperature         80 – 95         °C           Back Pressure         0.2 – 0.3         MPa	Melt Temperature	270 – 275	°C	
Rear - Zone 1 Temperature         250 – 260         °C           Mold Temperature         80 – 95         °C           Back Pressure         0.2 – 0.3         MPa	Front - Zone 3 Temperature	270 – 280	°C	
Mold Temperature         80 – 95         °C           Back Pressure         0.2 – 0.3         MPa	Middle - Zone 2 Temperature	260 – 270	°C	
Back Pressure 0.2 – 0.3 MPa	Rear - Zone 1 Temperature	250 – 260	°C	
	Mold Temperature	80 – 95	°C	
Screw Speed         30 – 60         rpm	Back Pressure	0.2 – 0.3	MPa	
	Screw Speed	30 – 60	rpm	

<sup>(1)</sup> The information stated on Technical Datasheets should be used as indicative only for material selection purposes and not be utilized as specification or used for part or tool design.

### **MORE INFORMATION**

For curve data and CAE cards, please visit and register at https://materialfinder.sabic-specialties.com

<sup>(2)</sup> UL Ratings shown on the technical datasheet might not cover the full range of thicknesses and colors. For details, please see the UL Yellow Card.

<sup>(3)</sup> Measurements made from laboratory test coupon. Actual shrinkage may vary outside of range due to differences in processing conditions, equipment, part geometry and tool design. It is recommended that mold shrinkage studies be performed with surrogate or legacy tooling prior to cutting tools for new molded article.

<sup>(4)</sup> Injection Molding parameters are only mentioned as general guidelines. These may not apply or may need adjustment in specific situations such as low shot sizes, large part molding, thin wall molding and gas-assist molding.



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